

## **WARRANTY CLAIM PREPARATION SYSTEM**

This application claims the benefit of U. S. Provisional Application No. 60/348,832, filed on 15 January 2002, which provisional application is incorporated by reference herein.

### **5 Technical Field**

This invention relates to document completion systems, in particular, warranty claim form completion systems.

### **Background of the Invention**

10 Anyone who prepares original equipment manufacturer ("OEM") warranty claims for vehicles faces an extensive amount of time and work to prepare and track claims. Typically, this will require the preparer to:

1. Find the OEM part numbers for a particular vehicle using its vehicle identification number ("VIN");
- 15 2. determine the OEM standard repair time ("SRT") allowance for the repair;
3. apply the SRT codes required by the OEM;
4. apply the proper failure and cause codes required by the OEM;
- 20 5. prepare a report in a standard format with ability to add comments and explanations; and
6. maintain a record of the filed claim and track payment status.

25 Thus, there exists a definite need for systems that will facilitate the preparation of such warranty claims and alleviate the time, financial burden and waste of man-hours occasioned by this necessary duty. Unfortunately, current systems are

completely unavailable and/or deficient. In particular, there is no system that is able to find OEM part numbers by VIN, apply SRT codes required by the OEM, and apply the proper failure and cause codes required by the OEM. These deficiencies  
5 render all current systems unnecessarily labor intensive as these steps cannot be performed in an automated expedited manner. Instead, the preparer must often laboriously search for the necessary information by combing through reams and volumes of reference material.

## 10 **Summary of the Invention**

The warranty claim presentation system of my invention provides the ability to automatically accomplish all of the above-referenced needs in a few minutes. Thus, it is capable in most cases of: Finding the OEM part numbers for a  
15 particular vehicle using its vehicle identification number ("VIN"); determining the OEM standard repair time ("SRT") allowance for the repair; applying the SRT codes required by the OEM; applying the proper failure and cause codes required by the OEM; preparing a report in a standard format  
20 with ability to add comments and explanations; and maintaining a record of the filed claim and track payment status. This is accomplished by the universal electronic linkage system of my invention, which automatically matches associated parts, labor allowances and manufacturer's codes.  
25 For warranty, the parts must be the equivalent to those installed in the vehicle when it was manufactured. These are referenced by VIN and then linked to applicable warranty codes in the specially designed tables of my warranty claim presentation system. There are 27 different tables used.  
30 Using the system of my invention, combined with the preparation of custom databases of VIN-based parts and labor information, eliminates the drudgery and wasted time of using the many references necessary for filing warranty claims. The improved speed and accuracy of claim  
35 preparation results in prompt submission of claims and reduction of rejections for improper claim preparation.

## Description of the Drawings

FIG. 1 illustrates an initial sample screen for my invention providing icons for three possible search options.

5 FIG. 2 illustrates a sample screen reached upon selecting the *Parts & Labor Generator* from FIG. 1.

FIG. 3 illustrates a sample screen reached upon selecting a particular vehicle system from the sample screen illustrated in FIG. 2.

10 FIG. 4 illustrates a sample screen with parts per application description window.

FIG. 5 illustrates a sample screen with labor operations per application description window.

FIG. 6 illustrates a sample screen for a work summary.

FIG. 7 illustrates a sample screen for a work summary.

15 FIG. 8 illustrates a sample screen for a repair date.

FIG. 9 illustrates a sample screen for damage reason selection.

20 FIG. 10 illustrates a sample screen providing the full Labor Summary, complete with OEM Damage and Cause Codes, SRT Code, Description and Allowed Hours.

FIG. 11 illustrates a sample screen for a work summary.

25 FIG. 12 illustrates a sample screen for a completed Work Summary, ready for Electronic Warranty Claim form preparation with exactly the correct information required by the OEM.

FIG. 13 illustrates a sample screen for saving a work summary.

FIG. 14 illustrates a sample screen wherein all of the critical information and codes have been posted to the Warranty Claim form, ready for submission.

FIG. 15 illustrates a sample screen providing all Bills of Material for the vehicle.

FIG. 16 illustrates a sample screen showing all OEM parts for a Bill of Material.

FIG. 17 illustrates a sample screen showing all OEM parts for a Bill of Material.

FIG. 18 illustrates a table/sample screen showing all OEM parts for a Bill of Material.

FIG. 19 illustrates a sample screen for a direct part number search.

FIG. 20 illustrates a sample screen for entering a serial number.

FIG. 21 illustrates a sample screen used in a direct part number search.

FIG. 22 illustrates a sample screen used in cross-referencing a part number as part of a direct part number search.

FIG. 23 illustrates a sample screen used in finding a Bill of Material from a part number.

FIG. 24 illustrates a sample screen used in finding a Bill of Material from a part number.

FIG. 25 illustrates a sample screen used in finding a Bill of Material from a part number.

FIG. 26 illustrates a sample screen for a completed work summary.

FIG. 27 illustrates a sample screen for a completed work summary

### Description of the Invention

5 In order to practice my invention, it is first necessary to compile (at the minimum) a computer accessible database listing all vehicles on which warranty claims could be prepared for a user, all parts for each vehicle so listed, the original equipment manufacturer's standard repair time allowed for repair for each such part, the proper failure and cause codes  
10 required by the original equipment manufacturer for each such part, and the original equipment manufacturer's standard form for a warranty claim for that part. Various other features and information can be added to this database and is described in more detail below.

15 In addition to this database, my warranty claim preparation system relies on the use of a computer program for accessing and processing information from the aforesaid database. This program provides (at a minimum) a listing of vehicle parts for a particular vehicle listed in the database  
20 when the user indicates a particular vehicle in the database, provides the original equipment manufacturer's standard repair time allowed for repair when the user indicates a particular part, provides the original equipment manufacturer's proper failure and cause codes when the user  
25 indicates a particular part, and prepares a warranty claim on the original equipment manufacturer's standard form for a warranty claim based on the aforesaid information.

Preferably, and in order to facilitate the operation of my system, a single code number is used in the database to  
30 denote each part and the original equipment manufacturer's standard repair time for that part. This code number is used by the computer program to, among other things, link these to the vehicle system for the part, the proper failure and cause codes required by the original equipment manufacturer  
35 for the part, the original equipment manufacturer's standard

form for a warranty claim for that part, and bills of material for the vehicle containing that part.

As illustrated in the accompanying drawing figures and outlined below, my warranty claim preparation system is  
5 simple to use and so flexible that it covers many different needs faced by warranty preparation personnel. It allows three electronically linked methods of obtaining and posting warranty information:

- 10 • *Direct Part Number Search* is used when a part number is known and the matching labor allowances and codes are needed.
- *Doculink* is used to find bills of material with their part number listings and then match them to labor allowances and codes.
- 15 • *Parts & Labor Generator* is used to look up part numbers by descriptions, along with their labor allowances and codes.

(A sample screen with icons for the foregoing search options is illustrated in FIG. 1).

20 Vehicles are indexed in the database by vehicle identification number (VIN) or a user's Unit Number. In order to find parts and labor by VIN or Unit Number in the *Parts & Labor Generator*, the user will left click on *Parts & Labor Generator*. This will bring up the basic sample screen  
25 illustrated in FIG. 2. The user would then key in the last eight digits of the VIN or the digits of the unit number and press Enter. The vehicle will automatically be described with vehicle systems listed. Thus, the user can then scroll down the list or enter the first three digits in Vehicle System and select  
30 one. For example, a left click on "011001 – AXLE-FRONT, NON DRIVEN" will bring up the sample screen/table illustrated in FIG. 3. The user can then scroll the Parts Application Description choices on the left, and the Repair Time

Application choices on the right. The user could then, e.g., left click on "FF-981, S, C1.S31L14A47X46HS". This would bring up the sample screen/table illustrated in FIG. 4. In the Parts Per Application Description window will appear the

5 KNUCKLE ASSY part numbers and descriptions that are specific to the VIN or Unit Number. The user can now scroll to and left click the matching Repair Time Application, which is "FRONT AXLE, KNUCKLE, SPINDLE". This will bring up the sample screen/table illustrated in FIG. 5.

10 In the Labor Operations Per Application Description window appear the OEM SRT (Standard Repair Time) codes and descriptions. Note that they are different from the Damage Group Codes above. The user will want to post the Part Number and Labor Operations to a Work Summary,

15 carrying along all information necessary for the warranty claim. Starting with parts, the user can perform a right click on, e.g., the Part Number TDA A3 3111W3377 and a left click on "Post to Parts Used". This will bring up the sample screen illustrated in FIG. 6. Now the user can post parts and labor

20 selections to a work summary. Here the OEM Part Number TDA A3 3111W3377 has been posted, along with its OEM Description. The Work Summary is fully editable, except for Primary Failed Item. Explanations can be added if desired. Now the user could return to PLG (clock icon) with a left click,

25 then right click on the second Part Number TDA A3 3111T3400. Left click on "Post To Parts Used and Primary Failed Item". In FIG. 7 the RIGHT HAND KNUCKLE ASSEMBLY has also been posted to the Work Summary and has also been identified as the Primary Failed Item.

30 Now the user can return again to PLG (clock icon) to post the labor. The user can right click on OEM SRT Code 400-0050B for R/R of TWO STEERING KNUCKES, and left click on "Post to Labor Summary". The sample screen/table illustrated in FIG. 8 may appear, requesting entry of the date

35 of repair in the format shown. (Warranty claim allowances are sensitive to date of repair—my system is intended to deal

with this requirement). The user can press Enter after keying in the date. After this, the screen illustrated in FIG. 9 may appear, requesting definition of a Cause or Damage Reason Code. (This is also generally required in a warranty claim). The user can then left click on, e.g., selection 740. It will automatically be applied to the end of the Damage Code. This leads to FIG. 10, the full Labor Summary, complete with OEM Damage and Cause Codes, SRT Code, Description and Allowed Hours. The user can then scroll the Primary Damage Code window and left click to post the appropriate code, as illustrated in FIG. 11. (This is another piece of essential information). Also note that "campaigns" (required field repairs) are also comprehended by the system.

Finally, FIG. 12 illustrates the completed Work Summary, ready for Electronic Warranty Claim form preparation with exactly correct information required by the OEM. The user can now left click the folder icon to create a record of this Work Summary. This leads to the sample screen/table illustrated in FIG. 13. Here a file has been created entitled "022352 09/24/2001 WARRANTY" which can be saved and researched at any time to check warranty claim status and to look at a claim history by VIN or Unit Number. The tracking of claim status requires that this file be prepared. This is accomplished automatically in my system. Finally, FIG. 14 illustrates all of the critical information and codes posted to the Warranty Claim form, ready for submission. My system automatically posts the critical claim information onto the manufacturer's form, just as is required by each different manufacturer. Each claim form is different.

If the user wishes to use Doculink to view all Bills of Material line settings, he can left click the camera icon to open Doculink, key in the VIN or Unit Number and press Enter. This leads to the sample screen/table illustrated in FIG. 15, which lists all Bills of Material for the vehicle. If the user were to, e.g., double click the image name 400-C10707 for the Front Axle he would reach the sample screen/table illustrated



in FIG. 16. Here is the Line Setting for Bill of Material 400-C10707, used on Truck Serial Number LG46309. All of the OEM parts content is shown. Now the user will want to find the matching Labor Allowances and Codes. To do this he can left click on the "Text Select Tool" icon in the left tool bar. Doing so makes the Line Setting part numbers searchable. The user can then highlight part number TDA A3 3111T3400 as illustrated in FIG. 18, right click on it and then left click "Copy".

If the user wishes to initiate a direct part number search, he can do so by a left click on the binoculars icon. Right click and paste or key in, e.g., the part number TDA A3 3111T3400 and left click on Search. This leads to the sample screen/table illustrated in FIG. 19, where we see the part number, cross reference (Rockwell-Meritor), bill of material number and its Vehicle Maintenance Reporting Systems (VMRS) Code, 011001. In order to find its Labor Allowance, right click on ERGHT and left click on "Post to Parts and Labor Generator". (This is a reverse of starting with a VIN to find a part number, but it leads to the same result as shown in FIG. 21). The sample screen/table illustrated in FIG. 20 will appear, requesting the vehicle serial number. The user can key it in and press Enter, leading to the sample screen/table illustrated in FIG. 21. Now the system has automatically posted part number TDA A3 3111T3400 into PLG and presented the Repair Time Application choices with it. From there the user can proceed in the same manner discussed with respect to FIG. 4 and set forth in its accompanying text.

The user can also cross-reference a part number in a direct part search. Sometimes a part number appears on a part as a supplier number, not as an OEM. The database further includes supplier numbers for parts, and the program can operate fully using supplier numbers as well as original equipment manufacturer's numbers. Here, as illustrated in FIG. 22, removal of the "TDA" prefix from the Freightliner part number and a search in the Direct Part Number Search

reveals that the part is made by Rockwell (Meritor). The Rockwell number might appear on the part, but the Freightliner number is needed for the warranty claim. The user can right click on the TDA part number and then left  
5 click on "Post To Parts Used".

Likewise, the user can find a bill of material from a part number. (See FIG. 23). Here the drill-down in PLG has, e.g., found part number TDA A3 3111T3400. All of the parts associated with it can be automatically found in its Bills of  
10 Material. To do so, the user can right click on the part number, then left click on "Post to Doculink". (See, also, FIG. 24). Here is a screen showing the Bill of Material "Image Name" for part number TDA A3 3111T3400. The user can double left click on the Image Name, leading the complete Bill  
15 of Material for part number TDA A3 3111T3400 and all associated parts to appear. (See FIG. 25). The user can now proceed to find the Labor in the same manner discussed with respect to FIG. 16 and set forth in its accompanying text.

20 My invention can be used to obtain and record the proper warranty claim information for many OEM makes. For example, FIG. 26 sets forth a completed Work Summary for an International truck, while FIG. 27 sets forth a Work Summary for a Volvo WG64.

25 In summary, my invention allows the user to obtain and record valid OEM complaint, cause and correction information and codes for filing warranty claims by:

- Searching VIN or Unit Numbers to obtain both parts and matching labor information and codes.
- 30 • Searching known part numbers to find bills of material of associated part numbers and matching labor information and codes by VIN.

- Posting information which can be directly entered onto a claim form.
  - Cross-referencing of part numbers, casting numbers, etc. as they appear on supplier's parts to OEM part numbers.
  - Filing information for claim follow-up and historical records.
  - Covering "All-Makes" of vehicles with one referencing system.
- 10 However, it is to be understood that the inventive concepts underlying and embodied in my invention can be incorporated in different forms so that the general concepts described in the preceding description is not to be superseded by the particularity of the attached drawings. Various alterations, 15 modifications, and/or additions can be made without departing from the spirit or ambit of the invention.